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ABSTRACT

Three methods of evaluation were used to study a coordinated instruction employment counseling course focusing on student adjustment to work. The ability of coordinated instruction to improve the adjustment of disadvantaged students to work was measured using experimental and control groups of educationally handicapped servicemen enrolled in a Pre Discharge Education Program. The experimental group, receiving twelve hours of coordinated instruction, improved their scores, as shown by pre- and post-testing for achievement motivation. Ability of media to change attitudes was measured with four college vocational planning classes being questioned as to interest in occupational information; two of the classes, which were shown a film on goals, showed increased interest level. Analysis of costs directed to the cost/effectiveness of coordinated instruction in reaching large groups of students indicated savings through the use of para-professionals with instructor coordination versus regular instructor only. Research and film production costs become economical only when fifty or more sets of films can be sold. Since media can communicate more concisely, it does permit more class time to be spent in activity and discussion. (EA)

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A COORDINATED INSTRUCTION EMPLOYMENT COUNSELING SYSTEM FOCUSING ON STUDENT ADJUSTMENT TO WORK

FINAL REPORT

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FINAL REPORT

A COORDINATED INSTRUCTION EMPLOYMENT COUNSELING SYSTEM FOCUSING ON STUDENT ADJUSTMENT TO WORK

ABSTRACT

Three methods of evaluation were used to study a coordinated instruction employment counseling course focusing on student adjustment to work. The ability of coordinated instruction to improve the adjustment of disadvantaged students to work was measured by experimental and control groups of educationally handicapped servicemen enrolled in a Pre Discharge Education Program (PREP). Both groups were pre and post tested for Achievement Motivation on the projective "Exercise in Imagination". The experimental group receiving 12 hours of coordinated instruction improved their scores 90% over the controls who received only regular instruction.

The ability of media to change attitudes was measured with four vocational planning classes at College of San Mateo. All four classes were questioned as to their interest in occupational information. This question was selected to indicate motivation to learn. Counselors teaching such courses indicated this area is a real problem. Two of the classes were asked the same question several weeks later after only regular class activities. Interest increased only 1% for these groups. The other two classes were shown the film on goals and asked the same question. These groups increased their interest by 17.7%. One group discussed the film before answering; their scores increased from 3.25 to 4.00. The other group answered before discussing the film; their scores increased from 3.44 to 3.76. Possible answers ranged from (1) no interest to (5) very interested.

An analysis of costs directed to the cost/effectiveness of coordinated instruction in reaching large groups of students showed a savings of 65% in salary costs per unit of credit: $7. for para-professional salaries with instructor coordination versus $20. per unit of credit per student in regular instructor salary costs. Research and film production costs become economical only when fifty or more sets of films can be sold. The format used requires 60 to 90 minutes of media for one unit of credit. Because media can communicate more concisely, most class time can be spent in activity and discussion. In lots of fifty, four twenty minute films would cost approximately $1,000. per set. Print costs are only $100. per set, so in quantities over 50, the price per set can be significantly reduced. This analysis suggests that State supported research is probably necessary for quality course production that is backed by sound educational research.

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A COORDINATED INSTRUCTION EMPLOYMENT COUNSELING SYSTEM FOCUSING ON STUDENT ADJUSTMENT TO WORK

FINAL REPORT

JOAN M. LEWIS

V.E.A. Part C Research
No. 41 69054 0183 71

SAN MATEO JUNIOR COLLEGE DISTRICT

RESEARCH OBJECTIVES

This proposal tested the effectiveness of a media approach to a previously field-tested behavioral model designed to establish positive attitudes and behaviors leading to employment success in disadvantaged and handicapped workers. It also tested the feasibility of using a coordinated instruction system to improve the quality of vocational guidance, reduce the per student cost, and reach a larger proportion of the population that wants to develop the knowledge and understanding necessary for successful employment.

The intent of the project was to develop ten films, one for each component of the previously tested career course. The original timetable anticipated three years for media development, evaluation, revision, course packaging for television, and final coordinated instruction programming and testing. The State mandate that Part C Research must be completed in one year forced a rather unrealistic decision to try and complete all activities in one twelve month period. The course had always been taught as a complete unit and at the time the project was written, it was not known how only a few of the components could be used effectively.

Procedural delays further handicapped efforts however, and in January of 1972, it was decided to reduce the number of films produced and change the evaluation format to reflect the new schedule. (See Quarterly Report 1-27-72.) Outside evaluation was suggested, but costs posed a real problem. Several individuals and agencies were consulted during the spring semester for evaluation formats. New procedures were designed which combined in-house activities with

outside test-scoring were designed. (See Quarterly Report 3-30-72.)

RESEARCH DESIGN

The problem of using only a few components of the course was resolved with the discovery that four of the course components were very closely related to the Achievement Motivation Training offered by David McClelland of Harvard University. Using an instrument designed by Dr. McClelland, a format was developed to pre and post test one class of disadvantaged students randomly divided into experimental and control groups. The effectiveness of the coordinated instruction system in producing behavioral change could be equated to the research done by Dr. McClelland, which showed a high correlation between scores on his test and achievement success. This evaluation format allowed completion of the study in a time frame that was too short for measurement of actual change on the job.

The effectiveness of media in producing attitudinal change was measured by dividing four vocational planning classes of approximately twenty-five students each into two experimental and two control groups. Two of the groups were shown one of the films while the other two classes received only their regular instruction. Change in interest in occupational information was used as a measure of attitudinal change and was recorded for all groups by pre and post testing. One of the experimental groups discussed the film before completing the post test. The other experimental group completed the post test immediately after viewing the film and before any discussion.

The final evaluation was a cost analysis of coordinated instruction. Included in the study were costs for media to communicate affective data, printed materials for cognitive information, and para-professionals to show the films and lead the games and discussions following the film presentations.

COURSE SETTING

The primary intent of this project was to show the effectiveness of coordinated instruction in teaching new attitudes and behaviors to disadvantaged students. Originally, it was intended to administer the Norcal Questionnaire to all Cooperative Education students and use the criteria established by the Norcal study to determine disadvantaged status. Since the films were not completed until June, this procedure was not possible. Cooperative Education is not offered during the summer. It was found, however, that Foothill College offered a course to servicemen who had already been identified as disadvantaged to prepare them to continue their education. The class consisted of twenty-six enlisted men enrolled in the college's PREP Program (Pre Discharge Education Program). PREP is a twelve week course to help educationally handicapped servicemen earn a high school diploma or brush up on course work in preparation for college. The group was about 30% Black and 15% Chicano. The men were released from their regular assignments for four hours per day and contributed three hours of their own time four days per week. The men were often required to go on duty in the evening so that not every man was always available every evening.

The twenty-six men were randomly divided into experimental and

control groups. Of the thirteen experimental members, only six were able to attend all four of the three hour evening sessions comprising the course. These six were matched with six of the controls for statistical evaluation. The course was offered the last week of the PREP Program on Monday through Thursday evenings from 6 to 9 p.m.

TEST INSTRUMENTS

The effectiveness of the four instructional units comprising the course were measured by a projective test developed at Harvard University's School of Social Relations by Dr. David McClelland. The test, called "Exercise in Imagination" is designed along the lines of Harry Murray's Thematic Apperception Test. This version is published by McBer and Company, Cambridge, Massachusetts. It has been normed over the past ten years on businessmen in this country and abroad. A copy of the test and the scoring profile are attached to this report.

The pre and post tests were scored by McBer and Co. A 90% reliabity exists between scorers. To assure maximum reliability, however, both pre and post tests were scored by the same individual. The scorer had no knowledge of which tests belonged to the experimental group and which to the controls. The validity of the test to measure the course objectives is explained in the course outline.

McClelland's research with businessmen in underdeveloped countries strongly suggests that once an individual learns how to think, feel and act like an achiever, he has the option to become one. The

businessmen in India who took the Achievement Motivation training started four times as many new businesses, invested twice as much capital and created more than twice as many new jobs as the control groups who didn't take the training. These same techniques have been applied with equal success to other areas of endeavor.

The concepts involved in this Achievement Motivation training were found to be very similar to four of the components of the original ten planned for this study. For this reason, the "Exercise in Imagnation" was deemed most appropriate to measure the effectiveness of the units taught in this project.

An additional instrument, not part of the statistical evaluation, was used to subjectively evaluate the student's ability to write a personal achievement goal and identify the related thoughts, feelings and actions necessary to achieve it. A copy of this form is contained in the Appendices.

The capability of meida to produce attitudinal change was measured by questionnaires administered to four vocational planning classes at College of San Mateo. Pre testing information was obtained from a Career Information Survey which had been administered for another purpose but contained a question on the degree of student interest in occupational information. A copy of this questionnaire may be found in the Appendices. Four weeks later, the control groups were given the single question on the Survey form dealing with interest in occupational information. The experimental groups were given a questionnaire evaluating the film they had just seen which included

the question on occupational information. This questionnaire is also in the Appendices.

The film was also presented at a California Personnel and Guidance Workshop. Counselors attending were asked to evaluate the film in terms of its ability to change attitudes. Their comments are included in the Appendices.

EXPERIMENTAL VARIABLE

The instructional model used in this study consists of a nine component matrix developed and field-tested by Experiential Research Associates. The course consists of the nine units of the matrix plus an introductory unit on identifying personal motives. There is a summary at the end which includes formulating personal objectives. The nine matrix components are divided into three processes. Only the first component under each of the process headings was taught in the PREP Program experiment.

MOTIVATION	THOUGHT PROCESS	FEELING PROCESS	BEHAVIOR PROCESS
ACHIEVEMENT	AWARENESS	CONFIDENCE	HERITAGE
POWER	ANALYSIS	RESPECT	GROWTH
AFFILIATION	ORGANIZATION	PEACE	INTEGRATION

The matrix components and introductory unit used in this study are explained as follows:

MOTIVATION - The payoff an individual is hoping for when he carries out a particular action. Motivation persists even when there is little, if any, actual payoff. Lack of awareness often prevents the individual from recognizing that his behaviors are not producing the desired payoff. The course defines three groups of motives: achievement, power, and affiliation. Only the first three units, the achievement motives were actually taught, however. These motives provide a framework to analyze personal experiences and strategies so that the thoughts, feelings and actions of the individual can be directed towards the desired goal.

AWARENESS - The ability to see opportunities in the environment to fulfill one's needs. This quality is developed by becoming sensitive to one's surroundings and open to all the positive and negative vibrations of a situation. The individual lacking this quality will see only what he wants to see in a situation and confuse fantasies about fulfilling needs with real opportunities. Openness is essential. Negative aspects of a situation that are not recognized and acknowledged can undermine the most sincere effort; ones that are known can become challenges and be dealt with effectively. The student is asked to view jobs in terms of their purpose and the personal needs these purposes might meet. He is then given assignments to research the world of work experientially. He collects as many facts and opinions as he can, then checks these out in actual job environments. The objective is to increase the student's awareness of his own reactions and find discrepancies and gaps in information from his own observation. Opportunities to fulfill more than one motive on a job are also explored.

CONFIDENCE - The ability to use success and failure feelings as tools to measure progress towards a goal. This quality is developed by building a feedback system where the individual learns as much from his failures as his successes. Each activity is viewed in terms of what one hopes to accomplish. The result of each activity is a point of measurement between where one started and where one wants to go. Failures define the work still to be done. Successes define that which has been accomplished. Failures become threatening, not when they are viewed individually in terms of a specific goal, but when they are lumped together as a competitive statement of what is and always will be. In this course, competition is examined as a form of evaluation where a person uses other people to measure himself. Through competition, a person learns exactly how good he is in terms of the particular game he has decided to play. Competition is really another name for evaluation and concrete feedback. The individual learns to avoid risks that would cost him the game while experimenting enough to gain a competitive edge. A thorough knowledge of one's own skills is essential to make sound judgements about the optimum point of risk. This ability to accomplish increasingly difficult tasks produces the sense of confidence required to reach a goal.

HERITAGE - The ability to deal effectively with the personal and environmental obstacles in a person's heritage that might prevent him from achieving his goal. A child learns certain behaviors to cope with his world. He is rewarded for certain behaviors. Often these behaviors persist when the child grows up and and his strategy is no longer appropriate. The environment may have changed and not

pose the threat or reward it once did. Recognition of behaviors that are counter-productive to the goal are explored through games and simulations. The course presents three patterns of behavior that have been shown to be effective in reaching three types of goals, with the emphasis on achievement behaviors. Conditioning exercises called action strategies are used to teach the desired behaviors.

An explanation of the film plots used to illustrate these components may be found at the end of this report along with an explanation of the remaining six components that were not dealt with in this project. Measurement of the student's understanding of these components was made by professional evaluation (McBer & Co.) of the six stories written in response to the projective test pictures contained in the "Exercise in Imagination". The criteria for scoring the test components and their relation to the course components is identified below. A more complete scoring guide is contained in the Appendices.

Unit I - MOTIVATION Goal Process Film - "When I Grow Up"

Course objective: State an achievement goal and distinguish it from a task or a power or affiliation goal

Course component: Identifying the payoff one expects from a particular action

Test component: Concern with Excellence (Power and Affiliation motives were not scored)

Scoring categories: Achievement Imagery - story identifies one or more of the criteria for an achievement goal

Achievement Theme - entire story is concerned with achievement

Unit II - AWARENESS Thought Process Film - "Got to Be Room for Me"

Course objective: Research the world of work in terms of one's personal needs

Course component: Finding opportunities to fulfill one's needs

Test component: Planning and Action for Goal Attainment

Scoring categories: Activity - story describes an overt or mental act designed to reach an achievement goal

Help - someone in the story seeks or receives help in reaching an achievement goal

Unit III - CONFIDENCE Feeling Process Film - "Who's afraid of the Stopwatch"

Course objective: Evaluate and improve personal knowledge and skills in relation to jobs

Course component: Using success and failure as tools in measuring progress towards a goal

Test component: Committment to Attaining Goals

Scoring categories: Need - story expresses a strong desire to reach an achievement goal

Success Feelings - story expresses positive feelings associated with accomplishment, active mastery or goal attainment

Failure Feelings - story expresses negative feelings associated with frustration or failure to reach a goal

Unit IV - HERITAGE Action Process Film - "It Can Happen"

Course objective: Identify personal, family and cultural

obstacles and change behavior to remove at least one obstacle to success

Course component: Dealing with obstacles that might prevent goal attainment

Test component: Anticipating Outcomes and Obstacles

Scoring categories: Hope of Success - someone in the story anticipates, expects or dreams of success

Fear of Failure - someone in the story is worried about failure

Personal Obstacles - story expresses a personal lack that is an obstacle to success

World Obstacle - story mentions something in the environment that is an obstacle to success

Unit V --Formulation of Personal Career Objective Questionnaire

Course objective: Write a personal achievement goal meetint the four criteria of a measurable objective

Course summary: Describe one's personal motivation, thoughts, feelings and actions related to career goal

Evaluation : Written response to questionnaire summarizing each component of the achievement process

RESULTS OF THE STUDY

The study conducted to measure the effectiveness of the four units of the course produced a 90% increase in experimental over control group scores. The pre-test scores of the experimental group were 1.5 percentile points higher than the control group's before the film course and 39.2 percentile points higher after the course. The

experimental group increased their own pre-test scores by 33.5 percentile points. The control group scores decreased during the same period by 4.2 percentile points. The control group drop is not significant as shown in Table 1 below. The experimental group increase is highly significant, however. Using a t test, significance was achieved at the .001 level. The means were achieved by adding together the percentile scores received on each of the eleven categories of the "Exercise in Imagination" test.

MEAN PERCENTILE RANK SCORES

	Pre-test Scores		Post-test Scores		Difference	
	Mean	S.D.	Mean	S.D.	t	p
Experimental Group n = 6	49.1	6.29	82.6	12.42	5.465	.001
Control Group n = 6	47.6	8.47	43.4	1.25	.582	n.s.

Table 1

The eleven categories of the test were divided into the four units of the course as outlined in the previous section. The results are shown in Table 2 on the following page. Scores for each category are shown in Table 3 on page 15. The symbols AI, Th, Act, etc. refer to the items in the scoring categories.

MEAN PERCENTILE RANK SCORES BY FILM UNITS

	Experimental Test Scores		Control Test Scores		Difference Exp over Con	
	pre	post	pre	post	pre	post
FILM ONE AI, Th	34.6	80.9	28.5	16.5	-6.1	+64.4
FILM TWO Act, H	47.7	84.2	54.4	41.9	-6.7	+42.3
FILM THREE N, F+, F-	62.4	80.0	53.7	48.3	-8.7	+38.7
FILM FOUR Sa, Fa, Bp, Bw	47.0	85.4	49.0	52.7	-2.0	+32.7
Percentile Rank Norm: B U S I N E S S M E N						

Table 2

MEAN PERCENTILE RANK SCORES BY TEST CATEGORIES

	Experimental Test Scores		Control Test Scores		Difference Exp over Con	
	pre	post	pre	post	pre	post
Unit I - MOTIVATION Learning to state an achievement goal						
Image	42.5	95.2	30.3	23.0	-12.2	+67.2
Theme	26.7	71.5	26.7	10.0	0	+61.5
Unit II - AWARENESS Researching the environment in terms of self						
Activity	50.3	88.8	63.8	38.7	-13.5	+50.1
Help	45.0	79.5	45.0	45.0	0	+34.5
Unit III - CONFIDENCE Evaluating and improving personal skills						
Need	51.3	95.1	43.7	36.0	+7.6	+59.1
Success Feelings	71.1	81.3	61.0	61.0	+10.0	+20.3
Failure Feelings	64.7	57.5	56.3	48.0	+8.4	+9.5
Unit IV - HERITAGE Overcoming obstacles & conditioning behavior						
Hope of Success	39.7	97.0	39.7	68.3	0	+28.7
Fear of Failure	53.7	77.7	53.7	56.3	0	+21.4
Personal Obstacl	53.5	82.0	45.0	45.0	+8.5	+37.0
World Obstacles	41.0	85.0	57.7	41.0	-16.7	+44.0

Table 3

the study conducted to measure the effectiveness of media in producing attitude change showed a 17.7% increase in experimental group scores over a 1% increase in control scores. The experimental class that filled out the film evaluation form prior to any discussion, increased their interest in occupational information from 3.44 to 3.76. The scale ranged from (1) no interest to (5) very interested. The class discussing the film before filling out the evaluation form increased their interest from 3.25 to 4.00. Discussion appeared to help in the attitude change process; but media alone did produce change. The interest of the classes not viewing the film did not change. Counselor discussion of the film at the C.P.G.A. Convention supported the idea that the film could deal with the emotional blocks that are difficult to get beyond in regular class activities.

The cost/effectiveness of the coordinated instruction format showed a 65% savings in salary over traditional counselor or instructor taught courses. Professional instruction assumes one instructor teaching a class of 25 students for purposes of this study (the average size of courses surveyed in the career planning area). Paraprofessional instruction assumes one aide leading a group of five students with one hour per ten students professional coordination time. Professional instruction costs are based on a salary and fringe benefit cost of $15,000. per F.T.E. of 15 units per semester. Aide costs are based on $2.50 per hour, the average currently paid for student tutors. The traditional course would cost a District $20. per student in salaries and the coordinated instruction format would cost only $7. per student. The cost of classroom facilities would

add to the cost of the traditional approach, while in-service training of staff would add to the coordinated instruction approach.

The cost of a Super 8 projector to show the films is $400. Initial cost plus 10% per year maintenance figured over a ten year life expectancy period amount to 10,000 viewing hours for $800. or .08 per hour. Since the films deal with attitudes and not rapidly changing job information, they do not need frequent revision. Current job information is contained in printed material which would be comparable in cost to normal instructional books paid for by students. In specially funded programs for the disadvantaged, these costs could be born by the college. A set of Super 8 film prints would cost approximately $100. If the cost of research and film production is added to this amount, 100 sets of films would cost $500. per set. It would take 50 sets of films at $500. per set to cover the cost of film production alone, without the research. The life expectancy of the films and the broad area of potential usage is well within the normal criteria for audio/visual film aquisition.

This way of looking at costs does not recognize the coordinated instruction benefits, however. The school does not merely have some films that can be shown on campus, but has a complete course that may be offered for credit without a professional instructor on the college payroll designing and leading the activities. Therefore, a per student cost per unit of credit seems a more realistic method of cost analysis. Five hundred students per semester over a four year period at $10. per student would cover the cost of research and film production. This is a long term invertment for one school to make, but

a system of state-supported, contract course production could become a money making operation in a few years. Profits from courses selling over the break-even quota could go into continuing research. Procedures could be established to get feedback from instructors, counselors, students and employers identifying particularly needed short courses dealing with information too unique or too difficult to be handled in traditional lecture formats. The instructional approach outlined in this study, allows students to get together in their homes or community meeting places after regular class hours. Experimental courses that are too specialized to offer in the regular curriculum may be introduced in this manner. A college does not need to add to its regular faculty to provide well researched new instructional subjects. This would appear to be particularly significant in an age when knowledge in increasing at such a rapid rate and no one can predict the permanent instructional needs of society.

SIGNIFICANCE OF THE STUDY

The results seem to indicate quite strongly that the career guidance model used in this research, when presented in a coordinated instruction format, can produce measurable change in an individual's ability to formulate and evaluate career goals. The more significant evaluation of the course will come with follow-up studies which will indicate whether or not the men actually achieve the career goals they set at the end of the course. However, research has shown that merely having a well defined goal produces a more successful student. So, the results of the course achieved in only four days would appear to be significant based solely on written results obtained so far. The course stresses formulating meaningful goals and becoming sensitive

to a changing environment.

Comparison of scoring categories among the control group disclosed one score that stands apart from the rest. Hope of Success went up 28.7 percentile points for the controls while all other categories either dropped or changed only a few points. The students had just received their high school diplomas at the time of the test. It is interesting to speculate that this may be a pattern followed by many high school or college graduates, particularly the disadvantaged. Concerns about Obstacles, Help or Activity may diminish once the diploma has been earned, and the graduate sees only the good things that should now be his. These scores may indicate that without special counseling, students may view schooling as an end to be achieved rather than a beginning. This may be a situation worthy of special attention on the part of counselors. It is gratifying that the experimental group - graduates also - had more comprehensive thoughts to deal with the future.

LIMITATIONS

The major limitation of the study was the small size of the groups in the coordinated instruction class. A very high level of significance was achieved using the standard t test. It is usually very difficult to reach significance with small groups using the parametric t test, since the probability of chance which the test is based on is so high with small groups. The results would seem to warrent further study using the large groups of disadvantaged and advantaged Cooperative Education students originally planned. Techniques for employer evaluation could then be incorporated into the research.

Another limitation was the reduced number of films produced for the series. It was possible to teach only the Achievement Process. Many students need help in influencing others or getting along with others. It seems desirable to have available in the course information dealing with all types of problems and needs that may arise on the job, so that each student may focus on his particular area of interest. It is hoped that the success of the first four units will help create opportunities for production and testing of the remaining films in the guidance series.

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